

WHAT IS CLAIMED IS:

1. A fuse comprising:

a first and a second end conductor element;

5 a fuse element secured between and making electrical contact with said end conductor elements, said fuse element comprising a first end portion, a second end portion, and a center portion extending between said first and second end portions;

10 an elongate fuse housing comprising an inside surface defining a passageway extending longitudinally from a first end to a second end of said housing, said housing extending between said end conductor elements, said fuse element extending through said passageway; and

a silicone coating at least partially coating said first and said second end portions of said fuse element.

15 2. A fuse in accordance with Claim 1 wherein said first and second end conductor elements comprise first and second end caps, said first end cap positioned over said first end of said housing and said second end cap positioned over said second end of said housing, said first and second end caps closing said passageway at either end to form a chamber inside said housing, said fuse element extending through said chamber.

20 3. A fuse in accordance with Claim 2 wherein said fuse element comprises a strip, said strip comprising:

a plurality of bends along said strip, said bends dividing said strip into a plurality of substantially straight segments; and

a plurality of weak spots extending the length of said strip, said weak spots located along said substantially straight segments.

25 4. A fuse in accordance with Claim 3 further comprising a plurality of contact locations between said strip and said inside wall of said housing, said contact locations configured so that upon occurrence of an arc, said strip interacts with said inside wall of said housing to extinguish the arc.

5. A fuse in accordance with Claim 3 wherein each said bend forms an angle in said strip of about 90 degrees.

6. A fuse in accordance with Claim 3 wherein said silicone coating at least partially coats said strip at a first location adjacent a first end of said strip, and at a second, separate, location adjacent a second end of said strip.

7. A fuse in accordance with Claim 6 wherein said silicone coating at least partially coats both sides of said strip at said first and said second locations.

8. A fuse in accordance with Claim 6 wherein said silicone coating at least partially coats one side of said strip at said first and said second locations.

9. A fuse in accordance with Claim 2 wherein said fuse element comprises an element assembly, said element assembly comprising:

a fuse wire; and

a substantially flat nonconductive bridge comprising a first end portion, a second end portion, and an elongate central portion, said elongate central portion comprising first and second side sections extending between said first and second end portions of said bridge, said first and second side sections defining an elongate opening in said bridge, said fuse wire extending between and coupled to said first and second end portions so that said fuse wire makes electrical contact with said first and second end caps, said fuse wire extending through said elongate opening in said bridge.

10. A fuse in accordance with Claim 9 wherein said silicone coating at least partially coats said fuse wire at a first location extending from said bridge first end portion into said elongate opening and at a second, separate, location extending from said bridge second end portion into said elongate opening.

11. A fuse in accordance with Claim 1 wherein said first and second end conductor elements comprise first and second terminal elements, said first terminal element positioned at said first end of said housing and said second terminal element positioned at said second end of said housing, said first and second terminal elements closing said passageway at either end to form a chamber inside said housing, said fuse element extending through said chamber, each said terminal element comprises a terminal blade extending outward from an end wall.

12. A fuse in accordance with Claim 11 wherein said fuse element comprises a strip comprising a plurality of weak spots extending the length of said strip.

13. A fuse in accordance with Claim 12 wherein silicone coating at least partially coats said strip at a first location adjacent a first end of said strip, and at a second, separate, location adjacent a second end of said strip.

14. A fuse in accordance with Claim 13 wherein said fuse element comprises a plurality of laterally spaced strips, each said strip comprising a plurality of weak spots extending the length of said strip and a silicone coating at least partially coating a first location adjacent a first end of said strip, and at a second, separate, location adjacent a second end of said strip.

15. A method of fabricating a fuse, the fuse comprising end conductor elements, a fuse element secured between and making electrical contact with the end conductor elements, an elongate fuse housing extending between the end conductor elements, and a silicone coating at least partially coating a first and a second end portion of the fuse element, the housing comprising an inside surface defining a passageway extending longitudinally from a first end to a second end of the housing, the fuse element extending through the passageway, said method comprising the steps of:

applying the coating to the first and second end portions of the fuse element;

coupling the fuse element to the end conductor elements; and

coupling the end conductor elements to the housing.

16. A method in accordance with Claim 15 wherein said end conductor elements comprise a first end cap and a second end cap, each end cap comprising a flange, and said step of coupling the end conductor elements to the housing comprising the steps of:

positioning the first end cap over the first end of the housing;

positioning the second end cap over the second end of the housing; and

crimping the flanges to engage the housing.

17. A method in accordance with Claim 16 wherein said fuse element comprises at least one strip of conductive metal, each strip comprising a plurality of weak spots extending the length of the strip and a silicone coating at least partially coating a first location adjacent a first end of the strip, and at a second, separate, location adjacent a second end of the strip, and said step of

coupling the fuse element to the end conductor elements comprises the steps of:

soldering the first end of the at least one strip of conductive metal to the first end cap; and

soldering the second end of the at least one strip of conductive metal to the second end cap.

18. A method in accordance with Claim 17 wherein said fuse element comprises one strip of conductive metal and said method further comprises the step of forming a plurality of bends in the strip to form a plurality of straight segments.

19. A method in accordance with Claim 16 wherein fuse element comprises an element assembly, the element assembly comprising a fuse wire, and a substantially flat nonconductive bridge comprising a first end portion, a second end portion, and an elongate central portion, the elongate central portion comprising first and second side sections extending between the first and second end portions of the bridge, the first and second side sections defining an elongate opening in the bridge, the fuse wire extending between and coupled to the first and second end portions so that the fuse wire makes electrical contact with the first and second end caps, the fuse wire extending through the elongate opening in the bridge, the silicone coating at least partially coating the fuse wire at a first location extending from the bridge first end portion into the elongate opening and at a second, separate, location extending from the bridge second end portion into the elongate opening.

20. A method in accordance with Claim 15 wherein said end conductor elements comprise first and second terminal elements, the first terminal element positioned at the first end of the housing and the second terminal element positioned at the second end of the housing, the first and second terminal elements closing the passageway at either end to form a chamber inside the housing, the fuse

element extending through the chamber, each terminal element comprising a terminal blade extending outward from an end wall.

21. A fuse element for a fuse, said fuse element comprising:

5 a strip of conductive metal comprising a plurality of weak spots extending the length of said strip, said strip comprising a first end portion, a second end portion, and a center portion extending between said first and second end portions; and

a silicone coating at least partially coating said first and said second end portion of said strip.

10 22. A fuse element in accordance with Claim 21 wherein said strip further comprises:

a plurality of bends along said strip, said bends dividing said strip into a plurality of substantially straight segments; and

15 a plurality of weak spots extending the length of said strip, said weak spots located along said substantially straight segments.

23. A fuse element in accordance with Claim 22 wherein each said bend forms an angle in said strip of about 90 degrees.

20 24. A fuse element in accordance with Claim 21 wherein said silicone coating at least partially coats said strip at a first location adjacent a first end of said strip, and at a second, separate, location adjacent a second end of said strip.

25. A fuse element in accordance with Claim 24 wherein said silicone coating at least partially coats both sides of said strip at said first and said second locations.

25 26. A fuse element in accordance with Claim 24 wherein said silicone coating at least partially coats one side of said strip at said first and said second locations.

27. A fuse element in accordance with Claim 21 wherein said conductive metal strip is replaced by a fuse element assembly, said element assembly comprising:

a fuse wire; and

5 a substantially flat nonconductive bridge comprising a first end
portion, a second end portion, and an elongate central portion, said elongate central
portion comprising first and second side sections extending between said first and
second end portions of said bridge, said first and second side sections defining an
10 elongate opening in said bridge, said fuse wire extending between and coupled to said
first and second end portions and extending through said elongate opening in said
bridge, said silicone coating at least partially coats said fuse wire at a first location
extending from said bridge first end portion into said elongate opening and at a
second, separate, location extending from said bridge second end portion into said
elongate opening.